

REMARKS

Reconsideration of the issues raised in the above referenced Office Action is respectfully solicited.

The rejection of Claims 2 and 5 under 35 USC §112, second paragraph as being indefinite has been considered. Claims 2 and 5 have been amended to delete the objected to phrase "such as". Further, Claims 2-5 are amended to reference a "motor" as recited in Claim 1. Reconsideration and withdrawal of the rejection of Claims 2 and 5 under 35 USC §112, second paragraph, is respectfully requested.

The rejection of Claims 1 and 2 under 35 USC §103 as being unpatentable over Horski, U.S. Patent No. 5 614 775 in view of Willcox, U.S. Patent No. 3 469 124 has been considered.

Horski discloses a two-speed direct-current motor for driving a fan for cooling a vehicle air conditioning condenser. The motor rotates at a first speed when windings are coupled in a first configuration and a second speed when windings are coupled in a second configuration by the commutator arrangement.

Figure 2 of Horski is a sectional view of the motor having a rear wall 32 and a front wall 34. A motor shaft 36 is supported at one end by a sleeve bearing 40 containing a ball and socket joint 41 and by a ball bearing 42 at the front end, from which the motor shaft 36 extends outwardly. Outer and inner commutating bars 62, 64 surround the motor shaft and project toward the front wall thereof. Contacts are moved between bars 62 and 64 to vary the speed of the motor.

Willcox discloses a multi-stage impulse-operated rotary stepping motor. As illustrated in Figure 3 of Willcox, a hardened steel pin 48 serves as a rotor shaft and extends through a hub 46.

Applicants' Claim 1 recites "a flattened tubular motor housing sealed at both ends". Horski discloses a cylindrical housing receiving the shaft 36 on one end and a rear wall 32

that closes the rear end of the motor casing 30. Thus, casing 30 of Horski is not tubular.

Applicants' Claim 1 further recites "first and second housing through holes formed in a center of first and second end plate portions on both sides of the motor housing". In Horski, there is no through hole in the rear wall 32 of the motor housing. The Office Action refers to Figure 2 of Horski as showing holes formed in a center of first and second end plate portions on both sides of the motor housing. Apparently, the Examiner is referring to inner portions, such as the contactor arrangement 52 within the casing 30 in Figure 2 which allows shaft 36 to pass therethrough. This arrangement is not an end plate of the housing.

Applicants' Claim 1 further recites first and second workpiece insertion recesses formed in "external surfaces of the first and second end plate portions of the motor housing" and that the insertion recesses are "encompassing the first and second housing through holes, respectively, and extending to an external periphery of the motor housing from the housing through holes". This feature is illustrated in Applicants' Figure 1 wherein the recesses 24, 25 extend from respective edges of the housing to respective through holes 22A, 23A.

The Office Action states that Figure 3 of Horski shows insertion recesses formed in the external surfaces of end plate portions. This statement is not understood, as Figure 3 is a top sectional view of the commutator arrangement showing commutating bars 62, 64 which project toward the front wall of the casing. There appear to be no insertion recesses, much less recesses that extend from first and second housing through holes to an external periphery of the motor housing.

The rejection relies on Willcox for teaching of a mounting hole that receives an output shaft that extends outwardly from both sides of the mounting hole. Thus, Willcox does not address the deficiencies set forth above with respect to Horski.

Moreover, the arrangement of Horski provides the shaft projecting from one side or end of the housing, rather than both sides as in Willcox. There is no motivation, absent Applicants' specification, to project the shaft from both sides of Horski, as projecting a shaft through the rear wall 32 would provide a disadvantage for Horski, which only needs to provide a rotating shaft with a fan mounted thereon that is located in front of a condenser.

For the above reasons Claim 1, and Claim 2 dependent therefrom, distinguish Horski and Willcox.

The rejection of Claims 3 and 4 under 35 USC §103 as being unpatentable over Horski and Willcox as applied to Claim 1 above, and further in view of Kuyama, U.S. Patent No. 6 417 589 has been considered.

Claims 3 and 4 are allowable for the same reasons set forth above with respect to parent Claim 1.

Kuyama is directed to a vibrating motor and portable device. Kuyama discloses a rotor shaft 11 that remains within the housing. Rotating of the shaft allows an unbalanced weight 14 attached thereto to provide a vibrating effect.

Applicants' Claim 3 recites that the maximum length of the rotor shaft in an axial direction is "equal to or less than the thickness between bottom faces of the first and second workpiece insertion recesses". Horski discloses the shaft projecting outwardly in order to rotate a fan for cooling a condenser. There is no motivation, absent Applicants' specification, to substitute the shaft of Kuyama which is maintained within the housing for the shaft of Horski, as the motor of Horski would not function to drive a fan with such a shaft arrangement. Thus the Horski motor would be inoperative.

For the above reasons, reconsideration and allowance of Claims 3 and 4 is respectfully requested.

The rejection of Claim 5 under 35 USC §103 as being unpatentable over Horski and Willcox as applied to Claim 1,

and further in view of Shimada, U.S. Patent No. 5 319 271 has been considered.

Shimada discloses a DC motor pulse signal generating device having a magnetic sensor and rotating magnet. Horski discloses a drive shaft having two speeds. There is no need to measure the speed of the shaft of Horski as only two predetermined speeds are provided. Thus, there is no motivation to provide the rotational sensing apparatus of Shimada for the motor of Horski. Therefore, reconsideration and withdrawal of the rejection of Claim 5 is respectfully requested.


Claims 6-13 have been added. Independent Claim 6 recites a brushless servomotor including a first workpiece insertion recess "formed in an external surface of said first end plate, said first workpiece insertion recess extending radially from said central aperture to an external periphery of said brushless servomotor". Further, independent Claim 6 recites a second workpiece insertion recess "formed in an external surface of said second end plate, said second workpiece insertion recess extending radially from said central aperture to an external periphery of said brushless servomotor". There is no disclosure of such insertion recesses in the applied prior art.

Dependent Claims 7-13 include other features that further distinguish the applied prior art.

For the above reasons, consideration and allowance of Claims 6-13 is respectfully requested.

Further and favorable reconsideration is respectfully solicited.

Respectfully submitted,

A handwritten signature in cursive script, reading "Brian Tumm", written in dark ink.

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